## REMARKS

Applicants have amended claim 1 to more clearly describe the present invention and address indefiniteness issues. Applicants have amended claims 7 and 8 to address issues with trademarks. Finally, applicants have amended claims 2-4 to reflect the changes to claim 1.

The below remarks address the substance of an interview between the examiner and the applicants' representative held on June 16, 2004.

Claims 1, 3, 5, 6, and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Dixon et al. (US 5,717,159). Specifically, the examiner states that Dixon et al. discloses a composition that comprises Al nanoparticles and polytetrafluoroethylene powder. The amended claims include further limitations to the claims not found in Dixon et al. or implied therein. The amended claims include a limitation of the formation of a metallic fluoride intermediate on the fuel. In the Dixon et al. composition, it is required that the Al nanoparticles be coated with a layer of oxide. Therefore, even if a metallic fluoride intermediate were formed during combustion of the Dixon et al. composition, said intermediate would not be formed on (underlining added for emphasis) the fuel, rather, it would be formed on the oxide layer surrounding the fuel. Thus, the intermediate would not provide its main purpose of the present invention; that of preventing an oxide layer from forming on the fuel to inhibit complete combustion.

Applicants further submit that one skilled in the art would not be taught to remove the oxide layer from the Al in Dixon et al. without some teaching that the metallic

fluoride intermediate would be formed on the fuel during combustion and said layer would prevent an oxide layer from forming on the fuel which inhibits combustion.

Therefore, the above referenced rejection should now be moot.

Claims 1, 2, 5, 6, and 7 stand rejected under 35 U.S.C. § 103(b) as anticipated by Ochi et al. (U.S. 5,565,710) and Hohmann et al. (6,132,536). Specifically, the examiner indicates that Ochi et al. discloses a composition that comprises nanoparticle boron and Viton and Hohmann et al. discloses a composition comprising Viton and nanoparticle graphite. However, the amended claims include the limitation that the fluoropolymer compound be mixed with the original poly-metallic energetic formulation in a solid particle form. In both of the above references, the Viton is used, as is normally the case in energetic formulations, as a binder. As such, it is required that the Viton be mixed with a solvent prior to adding it to a formulation. Both of the references clearly indicate that the Viton is mixed with acetone prior to adding it to the formulation. Also, since the Viton is not mixed into the formulation in a solid form, one would not obtain the metallic fluoride intermediate limitation also required by the amended claims. Therefore, any anticipation rejection is now moot.

Further, one skilled in the art would not be drawn to change the inventions described in the references to obtain the present invention because, first, the Viton is being used for a different purpose (a binder) in the references, and, second, without knowledge of the formation of the metallic fluoride intermediate, there would be no impetus to make such a change.

Claim 6 stands rejected under under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Specifically, the examiner indicates that the

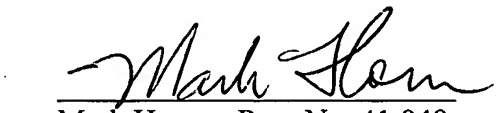
specification does not teach one how to make "microspheres" as is required by the claim. While the term microsphere is well known, it is used in over 4,000 patents, applicants have canceled this claim to remove confusion and make this issue moot.

Finally, claims 1-8 stand rejected under under 35 U.S.C. § 112, second paragraph as being indefinite. Specifically, the examiner indicates that the claims recite the term "nanoparticle" without referring to a specific size range of the particle. First, the term nanoparticle is well known in the art. It has been used in over 3,000 patents and used in the claims of over 440 patents, many of which do not specify a specific size range. Second, the examiner indicates that 1 micron could meet the definition of nanoparticle. Applicants assert that the invention, as claimed, would operate at 1 micron, 0.5 microns, 0.05 microns, or any other particle size that could be considered to be a nanoparticle. Third, applicants have amended claim 1 to clarify that the present invention is an improvement to energetic formulations containing poly-metallic nanoparticle fuels. Therefore, there can be no confusion of the size of the fuel particles, because the invention is based upon the premise that one skilled in the art already has developed the poly-metallic energetic formulation having these nanoparticles sized fuels, and the present invention simply improves upon said formulations. Therefore, applicants assert that indefiniteness due to the use of the term nanoparticles, if it were ever a problem, is no longer an issue.

Finally, the examiner objected to the use of trademarks in claims 7 and 8. Applicants have used the chemical names for the trademark materials. Please note that Viton® is a family of polymers consisting of the list now within the claim as defined on the Dow website.

Accordingly, applicants believe that claims 1-5, 7, and 8 are in condition for allowance and respectfully requests the examiner to withdraw all objections and rejections and allow said claims. Should the examiner need more information regarding this matter or have further suggestions regarding this application, feel free to call the undersigned at 301-744-5603.

Respectfully submitted,



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